



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,955	12/04/2002	Yoshiyuki Ando	YA04	2529

27797 7590 05/18/2004

RICHARD D. FUERLE
1711 W. RIVER RD.
GRAND ISLAND, NY 14072

EXAMINER

LOKE, STEVEN HO YIN

ART UNIT PAPER NUMBER

2811

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,955

Applicant(s)

ANDO, YOSHIYUKI

Examiner

Steven Loke

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-24 and 26 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

1. The disclosure is objected to because of the following informalities: Paragraph [0025], line 2, the phrase "...of this of invention." is unclear whether it is being referred to "...of this invention."

Appropriate correction is required.

2. Claims 11, 16, 17 and 26 are objected to because of the following informalities: Claim 11, lines 1-2, the phrase "said P-channel" has no antecedent basis. Claim 16, line 1, the phrase "said sides" has no antecedent basis. Claim 17, line 2, the phrase "said mask patterns" has no antecedent basis. Claim 26, lines 1-2, the phrase ".....on a semiconductor substrate in comprising" is unclear whether it is being referred to ".....on a semiconductor substrate comprising". Appropriate correction is required.

3. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 18 should be limited to the field effect transistors.

4. Claims 1-17, 19-24 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 7, claim 26, line 8, the phrase "radiation" is unclear. The specification (paragraph [0037]) discloses the sidewalls [36] of the fins are implanted with ions. It is believed that the sidewalls of the fins in at least one row are being irradiating with ions as claimed in claims 1 and 26.

Claim 8, lines 1-2, the phrase "the fins in alternating rows are turned 90 degrees" is unclear. Fig. 5 discloses the ion beam direction IV is 90 degrees from the ion beam direction I. It is believed that the fins in a row are being irradiating with an ion beam at a direction that is 90 degrees from a direction of an ion beam that irradiating an adjacent row of fins.

Claim 17, line 1, the word "sidewalls" is unclear whether it is being referred to the sidewalls of claim 1.

Claim 21, line 1, claim 22, line 2, the phrase "said fin" is unclear whether it is being referred to one of said fins of claim 1.

Claim 24, line 1, the phrase "between steps (B) and (C)" is unclear because there is no step (C) in claim 1 or claim 24.

Claim 24, lines 2-5, the phrase "photoresist on said top and one of said sidewalls is exposed using angled radiation and one of said sidewalls and substrate between fins is not exposed, and exposed or unexposed photoresist is removed" is unclear. Fig. 9 discloses the photoresist remains on one of the sidewalls and the substrate between fins while the top and the other sidewalls of the fins are exposed to the ion beams. It is believed that claim 24 should rewrite as "the photoresist remains on one of the sidewalls and substrate between the fins while the top and the other sidewalls of the fins are exposed to the ion beams".

5. Claim 25 is allowed.

6. Claims 1 and 26 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Art Unit: 2811

7. The following is a statement of reasons for the indication of allowable subject matter: The major difference in the claims not found in the prior art of record is the rectangular fins on the substrate are formed in a rectangular pattern of rows and columns such that D is approximately equal to $H \tan \theta$, where D is the distance between fins in adjacent rows, H is the height of the fins and θ is the angle of the ion beams to the surface of the sidewall of the fin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sl
May 13, 2004

Steven Loke
Primary Examiner

